

CLAIMS

What is claimed is:

1. A vehicle headliner comprising:
a plurality of carbon fibers; and
a binder for adhering said plurality of carbon fibers to one another thereby forming a mat.
2. The vehicle headliner of claim 1, wherein said plurality of carbon fibers is produced from petroleum pitch.
3. The vehicle headliner of claim 2, wherein said mat further comprises a plurality of natural fibers.
4. The vehicle headliner of claim 3, wherein said plurality of natural fibers includes at least one of sisal, hemp, kenaf, flax, and wood fibers.
5. The vehicle headliner of claim 3, wherein said plurality of carbon fibers comprises at least 50% of the total weight of said mat.
6. The vehicle headliner of claim 1 further including:
a core having opposing sides; and
a first structural reinforcement layer adjacent one of said opposing sides,
wherein said mat comprises a second structural reinforcement layer, said second structural reinforcement layer adjacent the other of said opposing sides.
7. The vehicle headliner of claim 6, further including:
a barrier film and a scrim layer adjacent said first structural reinforcement layer.

8. The vehicle headliner of claim 6, further including:
a barrier film and a covering adjacent said second reinforcement layer.

9. The vehicle headliner of claim 6, further including:
a layer of adhesive interposed between said opposing sides of said core and
said first and second structural reinforcement layers;
a barrier film and a scrim layer adjacent said first structural reinforcement
layer; and
a barrier film and a covering adjacent said second structural reinforcement
layer,
wherein said second structural reinforcement layer comprises a plurality of
carbon fibers and a binder for adhering said plurality of carbon fibers to one another
thereby forming a mat.

10. A method for manufacturing vehicle headliner, comprising the steps of:
a) providing a core having opposing sides;
b) providing an adhesive layer on at least one of said opposing sides of said
core; and
c) providing a first structural reinforcement layer adjacent one of said
opposing sides of said core, said first structural reinforcement layer including carbon
fibers.

11. The method of Claim 10, further including the step:
d) providing a barrier film and a covering on said structural reinforcement
layer.

12. The method of Claim 10, further including the step:
- e) providing a scrim mat having a second structural reinforcement layer including carbon fibers, a scrim layer, and a barrier film disposed therebetween adjacent the other of said opposing sides of said core to complete said laminate.
13. The method of claim 12, wherein, in step b), the carbon fibers are applied to the scrim mat to form the first structural reinforcement layer and deposited atop the coated core to form the second structural reinforcement layer.
14. The method of claim 10, wherein said first and second structural reinforcement layers are pre-formed mats of carbon fiber and thermoplastic binder.
15. The method of claim 10, wherein said core is made of a polyurethane resin foam.
16. The method of Claim 10, wherein said adhesive layers are liquid adhesive layers.
17. The method of claim 10, wherein the adhesive layers are applied at a rate sufficient to evenly coat the core with minimal surface penetration.
18. A method for recycling laminate material, comprising the steps of:
- a) providing a laminate material formed of composite materials including carbon fibers that have at least one of a higher melting point and degradation point than the other composite materials; and
- b) heating the laminate to a temperature above the incineration point of the other composite materials to reduce a portion of the composite materials to ash.

19. The method of claim 18, wherein the laminate is heated to a temperature below the degradation point of the carbon fibers in step b), and the carbon fibers that are not degraded are reclaimed to achieve a recycling effort.

20. The method of claim 18, wherein step b) further comprised the steps of placing the laminate in an incinerator prior to heating the laminate and then removing the ash and degraded carbon fibers from the incinerator after heating the laminate for disposal.